

CLAIMS

1. An in-mold coating method in which a resin molded product is molded and coated in a mold cavity formed between female and male molds, the method comprising:

5 a first step of charging molten resin into a mold cavity;

a second step of molding a resin molded product after charging of the molten resin into the mold cavity by reducing a volume of the mold cavity in accordance with a
10 thermal contraction of the molten resin to shape the molten resin;

a third step of forming a gap for injecting a coating material between a resin molded product and a surface of the mold cavity by slightly opening the mold when the resin
15 molded product solidifies to an extent to which the product can withstand the injecting pressure and flowing pressure of the coating material; and

a fourth step of injecting the coating material into the gap and clamping the mold again,

20 wherein the mold-clamping forces in the second and fourth steps are controlled so that the deformation of the mold by clamping is substantially the same in the second and fourth steps.

2. The in-mold coating method according to Claim 1,

25 wherein the mold-clamping forces used in the second and

fourth steps are substantially the same.

3. The in-mold coating method according to Claim 1 or 2, wherein the mold-clamping force used in the second step is smaller than that used in the first step.

5 4. The in-mold coating method according to Claim 3, wherein the mold-clamping force used in the second step is 10% to 50% of that used in the first step.

5. An in-mold coating method in which a resin molded product is molded and coated in a mold cavity formed between female and male molds, the method comprising:
10 a first step of charging molten resin into a mold cavity;
a second step of molding a resin molded product after charging of the molten resin into the mold cavity by
15 reducing a volume of the mold cavity in accordance with a thermal contraction of the molten resin to shape the molten resin;

a third step of forming a gap for injecting a coating material between a resin molded product and a surface of
20 the mold cavity by slightly opening the mold when the resin molded product solidifies to an extent to which the product can withstand the injecting pressure and flowing pressure of the coating material; and

a fourth step of injecting the coating material into
25 the gap and clamping the mold again,

wherein the mold-clamping force used in the second step is smaller than that used in the first step.

6. The in-mold coating method according to Claim 5, wherein the mold-clamping force used in the second step is 10% to 50% of that used in the first step.

7. The in-mold coating method according to Claim 5 or 6, wherein the mold-clamping force used in the second step ranges from 2 to 15 MPa in terms of pressure per unit area.

8. An in-mold coating method in which a resin molded product is molded and coated in a mold cavity formed between female and male molds, the method comprising:

a first step of charging molten resin into a mold cavity;

a second step of molding a resin molded product after charging of the molten resin into the mold cavity by reducing a volume of the mold cavity in accordance with a thermal contraction of the molten resin to shape the molten resin; and

a third step of injecting a coating material between a resin molded product and a surface of the mold cavity when the resin molded product solidifies to an extent to which the product can withstand the injecting pressure and flowing pressure of the coating material,

wherein the mold-clamping forces in the second and third steps are controlled so that the deformation of the mold by

clamping is substantially the same in the second and third steps.

9. The in-mold coating method according to Claim 8, wherein the mold-clamping forces used in the second and
5 third steps are substantially the same.

10. The in-mold coating method according to Claim 8 or 9, wherein the mold-clamping force used in the second step is smaller than that used in the first step.

11. The in-mold coating method according to Claim 10,
10 wherein the mold-clamping force used in the second step is 10% to 50% of that used in the first step.

12. An in-mold coating method in which a resin molded product is molded and coated in a mold cavity formed between female and male molds, the method comprising:

15 a first step of charging molten resin into a mold cavity;

a second step of molding a resin molded product after charging of the molten resin into the mold cavity by reducing a volume of the mold cavity in accordance with a
20 thermal contraction of the molten resin to shape the molten resin; and

a third step of injecting a coating material between a resin molded product and a surface of the mold cavity when the resin molded product solidifies to an extent to which
25 the product can withstand the injecting pressure and

flowing pressure of the coating material,
wherein the mold-clamping force used in the second step is
smaller than that used in the first step.

13. The in-mold coating method according to Claim 12,
5 wherein the mold-clamping force used in the second step is
10% to 50% of that used in the first step.

14. The in-mold coating method according to Claim 12 or
13, wherein the mold-clamping force used in the second step
ranges from 2 to 15 MPa in terms of in-mold pressure per
10 unit area.

15. An in-mold-coated molded product formed by the in-
mold coating method according to any one of Claims 1 to 14.